



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,609	02/27/2004	Timothy E. Snodgrass	03CR254/KE	9039
7590 07/16/2007				
Nathan O. Jensen				
ROCKWELL COLLINS, INC.				
400 Collins Rd. NE				
Cedar Rapids, IA 52498				
		EXAMINER		
		VERDI, KIMBLEANN C		
		ART UNIT		PAPER NUMBER
		2194		
		MAIL DATE		DELIVERY MODE
		07/16/2007		PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/789,609

Applicant(s)

SNODGRASS, TIMOTHY E.

Examiner

Kacy Verdi

Art Unit

2194

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

WILLIAM THOMSON  
SUPERVISORY PATENT EXAMINER

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This office action is in response to the Application filed on February 27, 2004. Claims 1-20 are pending in the current application.

#### ***Oath/Declaration***

1. The oath or declaration is defective because the declaration recitation of "...duty to disclose information which is material to the examination..." should be "...duty to disclose information which is material to patentability...". A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

#### ***Specification***

2. The disclosure is objected to because of the following informalities:
- a. paragraphs [0018] and [0020], line 3, the recitation of "waveform application 40", should be "waveform application 42";
  - b. paragraph [0019], line 4, the recitation of "ORB 42", should be "ORB 44";
  - and
  - c. Appropriate correction is required.
3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: claims 8, 11, and 16 refer to logic and data formatting functions that are determined to consume excessive processor throughput, however the specification does not disclose excessive processor throughput.

4. The use of the trademark CORBA™ has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

### ***Claim Objections***

5. Claim 16 is objected to because of the following informalities: line 2, the recitation of "hardware comprising", should be "hardware comprises". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 6 and 10-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claims 6 and 10 contain the trademark/trade name CORBA™, line 2. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is

used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe the object request broker and, accordingly, the identification/description is indefinite. Claims 11-14 are rejected since they are dependent on claim 10.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over "CORBA Delays in a Software-Defined Radio", by Bertrand et al. (hereinafter Bertrand) in view of "Implementation of a WNW within the JTRS Operating Environment Using Networking APIs", by Anderson et al. (hereinafter Anderson).

11. As to claim 1, Bertrand teaches the invention substantially as claimed including an apparatus that implements services for a waveform application, the apparatus comprising:

an object request broker (CORBA object request broker, page 153, left col., line 16) that marshals data from the waveform application for communication (page 152, Fig. 1 and page 155, left col., lines 58-61), wherein at least a portion of the object request broker is implemented in hardware (Fig. 2, each processor implementing some of the waveform software, page 152, right col., lines 13-14); and

Bertrand does not explicitly teach an object request broker interface that communicates the marshaled data using a memory pool.

However Anderson teaches an object request broker interface (commercial Object Request Brokers (ORBs), Fig. 6) that communicates the marshaled data using a memory pool (used pointers to shared memory to address transport delays, transfer methods supported by ORBs, page 975, right col., lines, 36-48, upgrade to shared memory approach used in Rockwell Collins Link 16 port to the JTRS SCA under JTRS Step 2b, left col., lines 29-31).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified the ORB communication mechanism of Bertrand with the teachings of shared memory from Anderson because this feature would have provided a mechanism to address the transport delays of the CORBA call copying of data (page 975, right col., lines 36-42 of Anderson).

12. As to claim 2, Bertrand teaches the apparatus of claim 1, wherein the apparatus is an application specific integrated circuit (ASIC) (e.g. processor, Fig. 2, each processor implementing some of the waveform software, page 152, right col., lines 13-14).

13. As to claim 3, Bertrand as modified teaches the apparatus of claim 1, wherein the apparatus is a field programmable gate array (FPGA) (page 974, right col., lines 29-31 of Anderson).

14. As to claim 4, Bertrand teaches the apparatus of claim 1, wherein the object request broker interface comprise a pluggable protocol interface (e.g. ease of

technology insertion, CORBA hides details of the hardware architecture, left col., lines 30-44).

15. As to claim 5, Bertrand as modified teaches the apparatus of claim 1, wherein the object request broker interface comprises a custom interface (part of SCA OE Framework, specified interface for CORBA, page 972, left col., line 46, right col., lines 1-5 of Anderson).

16. As to claim 6, Bertrand teaches the apparatus of claim 1, wherein the object request broker is a CORBA (Common Object Request Broker Architecture) broker (page 153, left col., line 16).

17. As to claim 7, Bertrand as modified teaches the apparatus of claim 1, wherein the memory pool comprises a multi-port memory pool (shared RAM Card with 2 ports, Fig. 6, of Anderson).

18. As to claim 8, Bertrand as modified teaches the apparatus of claim 1, wherein the at least a portion of the object request broker that is implemented in hardware comprises logic and data formatting functions (e.g. CORBA call copying of data, page 975, right col., line 36 of Anderson) that are determined to consume excessive processor throughput (e.g. transport delays) for a software application (the CORBA call copying of data and associated transport delays had to be addressed because the WNE protocol is a TDMA schema with tight real-time requirements, page 975, right col., lines 36-39 of Anderson).

19. As to claim 9, Bertrand teaches the apparatus of claim 1, wherein the at least a portion of the object request broker interface that is implemented in hardware comprises an operating system protocol stack (software stack, Fig. 1, Fig. 4).

20. As to claim 10, this claim is rejected for the same reasons as claim 1, see the rejection to claim 1 above.

21. As to claim 11, this claim is rejected for the same reasons as claim 8, see the rejection to claim 8 above.

22. As to claims 12, this claim is rejected for the same reasons as claim 9, see the rejection to claim 9 above.

23. As to claims 13 and 14, these claims are rejected for the same reasons as claims 2 and 3 respectively, see the rejections to claims 2 and 3 above.

24. As to claim 15, Bertrand teaches the invention substantially as claimed including a system for a joint tactical radio system (JTRS) compliant device that provides communication at low power requirements, the system comprising:

a hardware-implemented (Fig. 2, each processor implementing some of the waveform software, page 152, right col., lines 13-14) object request broker (ORB) (CORBA object request broker, page 153, left col., line 16) that marshals data from a waveform application (page 152, Fig. 1 and page 155, left col., lines 58-61);

a pluggable protocol interface (e.g. ease of technology insertion, CORBA hides details of the hardware architecture, left col., lines 30-44) that communicates the marshaled data from the hardware-implemented ORB (CORBA middleware, can perform a data format translation, converting data to a format appropriate to the



Art Unit: 2194

receiving, left col., lines 5-7), wherein at least a portion of the pluggable protocol interface is implemented in hardware (Fig. 2, each processor implementing some of the waveform software, page 152, right col., lines 13-14); and

Bertrand does not explicitly teach a memory pool that communicates data from the pluggable protocol interface directly and without transport overhead.

However Anderson teaches a memory pool (e.g. shared memory) that communicates data from the pluggable protocol interface directly and without transport overhead (CORBA call copying of data used pointers to shared memory to address transport delays, transfer methods supported by ORBs, page 975, right col., lines, 36-48, upgrade to shared memory approach used in Rockwell Collins Link 16 port to the JTRS SCA under JTRS Step 2b, left col., lines 29-31).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified the ORB communication mechanism of Bertrand with the teachings of shared memory from Anderson because this feature would have provided a mechanism to address the transport delays of the CORBA call copying of data (page 975, right col., lines 36-42 of Anderson).

25. As to claim 16, this claim is rejected for the same reasons as claim 8, see the rejection to claim 8 above.

26. As to claims 17 and 18, these claims are rejected for the same reasons as claims 2 and 3 respectively, see the rejections to claims 2 and 3 above.

27. As to claim 19, Bertrand as modified teaches the system of claim 15, wherein the JTRS compliant device is in an unmanned craft (radio prototype tested in the field with Vehicular, right col., lines 11-12 of Anderson).

28. As to claim 20, Bertrand as modified teaches the system of claim 15, wherein the JTRS compliant device is a battery powered radio (single channel JTRS wideband radio prototype, right col., line 14 of Anderson).

### ***Conclusion***


29. The prior art made of record on the accompanying PTO-892 and not relied upon, is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kacy Verdi whose telephone number is (571) 270-1654. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm EST..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on (571) 272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

July 7, 2007  
KV

  
WILLIAM THOMSON  
SUPERVISORY PATENT EXAMINER